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The Logic of ADHD: a brief review of fallacious reasoning

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Abstract

This paper has two central purposes: the first is to survey some of the more important examples of fallacious argument, and the second is to examine the frequent use of these fallacies in support of the psychological construct: Attention Deficit Hyperactivity Disorder (ADHD). The paper divides twelve familiar fallacies into three different categories—material, psychological and logical—and contends that advocates of ADHD often seem to employ these fallacies to support their position. It is suggested that all researchers, whether into ADHD or otherwise, need to pay much closer attention to the construction of their arguments if they are not to make truth claims unsupported by satisfactory evidence, form or logic.

Introduction

Until this paper, I have always managed to avoid writing in the first person. This is not to denigrate those who do, rather it is simply a personal choice, and perhaps reflex deference to one of the more suspect pillars of modernism, that of objectivity. However, it seems appropriate here, since the origins of my interest in this topic are not solely academic, and since, upon re-examination, I have also been guilty of what can only be described as dodgy logic in some of my previous writing. It would be unfortunate if this article was interpreted, not as an exegesis on various forms of fallacious argument, and as a set of ongoing concerns over the logic of ADHD, but rather as the smug view from the intellectual high-ground. This is not intended to be the case.

My initial concerns over faulty argument began with the purchase of Australian cable TV, obtained with the primary intention of watching as much English soccer as possible. As part of the package came a number of American news channels. A nebulous interest in American politics soon found me transfixed by Fox News, an entertaining, but relentlessly and shamelessly partisan, conservative network. Across a range of programs, I soon found myself lead—seemingly by reasoned argument—to conclusions that surprised me (to put it mildly), or

to a number of political positions that I most certainly did not hold, or to caricatures of those that I did. To mention but a few, loosely remembered, examples:

- *'Either you are for us, or against us'* (and therefore, by implication, a supporter of terrorism);
'Is it a good thing that Saddam Hussein is no longer in power?' 'Yes?' 'Then clearly you support the invasion of Iraq'.

After a little head-scratching, I realised both these claims were simply examples of a false dichotomy (see fallacy No. 4). In neither case are they the only possible options.

- *'Gun laws stop law-abiding citizens protecting themselves, while criminals get weapons anyway. If all the students at Virginia Tech had carried weapons, the killer would have been shot the after the first couple of murders.'*

This mind-boggling argument is an example of a number of fallacies, but most notably the Post-Hoc fallacy (see fallacy No.2), ie. incident follows gun laws, therefore gun laws cause incident.

- *'The ACLU (American Civil Liberties Union), with its support for NAMBLA (National American Man-Boy Love Association), demonstrates the moral bankruptcy at the heart of the far-left liberal agenda.'*

This is an instance of the Straw Man fallacy (see fallacy No. 8). The 'liberal agenda' is attacked through the medium of a ludicrously indefensible exemplar.

My interest in fallacious argument having been triggered by Fox News, I now found myself applying this reasoning to my ongoing academic research. I have been publishing on my ontological, epistemological and pedagogic dissatisfaction with the psychological construct of ADHD for nearly a decade. Consequently, I recently reviewed a number of arguments in support of ADHD that I had come across in various books, journals and web-sites. Given my scepticism regarding the disorder, it is perhaps not surprising that I found a treasure-trove of truly awful argument. Indeed, it will be a contention of this paper that some of the most important arguments in support of the notion of ADHD are fallacious.

The purpose of this paper is therefore twofold: the first is to review twelve of the more important examples of fallacious argument, an area of study once regarded as crucial to a good education, but now largely neglected. The second purpose is to examine the use of these fallacies to provide not only the logical foundation of ADHD, but also much of its intellectual

superstructure. However, before addressing the notion of fallacy directly, it is probably advisable to place my concerns over ADHD into some kind of intellectual context.

The ADHD Debate

ADHD first emerged as a discreet disorder in the Diagnostic and Statistical Manual (DSM-III) of the American Psychiatric Association in 1987. From this starting point, its popularity as a diagnosis has grown exponentially. With its symptoms of fidgeting, excitability, impulsivity, and lack of self control, current estimates of the prevalence of ADHD vary widely, but in some schooling populations the figure stands in excess of 10%. This new category of human existence has engendered a significant amount of controversy and disagreement within medical, psychological, academic and educational communities, with a number of distinct positions emerging.

The first grouping is comprised of ADHD advocates. There is now a huge literature on all conceivable aspects of the disorder, including its aetiology, central characteristics, and methodologies for intervention. Not only does this grouping regard ADHD to be an objective fact of nature, and hence in existence long before sharp-eyed psychologists first managed to give it a name, but they also largely appear to believe that ADHD is still under-diagnosed in the general population. The lack of supporting physiological evidence for the disorder is not regarded as a particular problem. A second position—essentially a sub-set of the first—is comprised of those who consider that, while ADHD may have been significantly over-diagnosed, there is still some grain of ontological truth to the disorder. Clearly, they argue, a few children exhibit symptoms of extravagant hyperactivity, and it is these individuals who truly belong within the boundaries of the disorder. The sub-text here is that surely large numbers of doctors, psychologists and pharmaceutical companies couldn't be completely wrong.

An alternative position rejects the 'objective' status of ADHD. There is a growing body of work which remains unhappy with the arguments offered by the first two groups, a dissatisfaction that takes a number of forms. Some writers have argued that ADHD is a fraud perpetrated by multi-national, Ritalin-manufacturing drug companies, eager to make gigantic profits irrespective of the dubious ethics involved in pathologising large swathes of the schooling population (Magill-Lewis, 2000). A similar, but less strident form of the same

position, contends that ADHD is simply a mistake, an amalgam of normal childhood behaviours. In what constitutes the most popular critique of the disorder, it is often argued that ADHD is simply a disorganised jumble of often-contradictory characteristics and causes, none of which validly cohere into any kind of consistent entity (Goodman, 1992). To put it another way, simply being towards the end of the normal curve on a diverse range of behavioural issues, does not suddenly make you sick.

While still challenging the notion that ADHD exists independently of human assessment and organisation, my own work in the area has largely taken a different approach. My central thesis is not that ADHD is a fraud or a mistake, rather that it is an artefact of governance, the product of a new set of truth-claims that sought to manage the conduct of specific populations. I argue that the arrival of increasing numbers of behaviour disorders has far more to do with the governmental imperatives to individuate, differentiate and normalise school children, than it has to do with the abilities of psychologists to discover more and more ‘natural’ forms of human difference (Tait, 2001). That is, by sub-dividing the population into an exponentially increasing number of categories, it becomes possible to regulate conduct to an ever-finer degree. This does not just include the most obvious external manifestations of docility and discipline (Foucault, 1977), but also the smallest workings of the human mind (Rose, 1990).

Although still part of my ongoing dissatisfaction with ADHD, this paper is not about governance. It is rather a more direct critique of the kinds of argument that advocates of ADHD use to prop up their position. If this entity is to be cemented as an objective fact of nature, as its devotees claim it should, then in the absence of any concrete physiological evidence of its existence, it will be the strength and logic of its supporting arguments that will ultimately decide its epistemological fate. I will argue here that many of these arguments are fallacious.

What is fallacy?

The word ‘fallacy’ has a number of meanings, largely dependant upon context. While fallacy can simply refer to any discourse of an incorrect or misleading nature, for the purposes of this paper, it also refers more specifically to a situation where a given discussion purports to obey the conventions of valid argument, but is actually unsuccessful in doing so. Therefore, a fallacy is, simply put, an error in reasoning.

Arguments generally come in two forms, deductive and inductive. A deductive argument is one where the truth of its premises guarantees the truth of its conclusions. Perhaps the most familiar form of this type of reasoning is Aristotle's syllogism, most commonly written as:

All A is B, (premise)
All B is C, (premise)
So, All A is C (conclusion)

And an example might be:

All hyperactive children have ADHD,
All those with ADHD need Ritalin,
So, All hyperactive children need Ritalin.

This argument is *valid*, in that its premises provide the necessary support for the conclusion. Of course, the question here is whether the argument is also *sound*, since for an argument to be sound as well as valid, it must also have true premises. I would suggest that the above premises are highly suspect—even in the most ADHD-obsessed parts of the world—and consequently, the argument is most likely to be regarded as unsound, *but not fallacious*.

However, a deductive *fallacy* (also called a formal fallacy) is an argument with an invalid form, as below:

All A is C,
All B is C,
So, All A is B

And an example might be:

All children can be naughty,
All those with ADHD can be naughty,
So, All children can have ADHD.

The conclusion to this argument may well be true (assuming you accept the notion of ADHD), and the premises may well be true, however those premises do not lead to the conclusion, and consequently the argument is neither sound nor valid. This paper will address a number of such formal, deductive fallacies of logic.

The main alternative to this form of reasoning is inductive argument. Inductive logic asserts that if something is true for 'n' examples of a given occurrence (when 'n' is a sufficiently large number), then it can be assumed to be true for the occurrence: n+1. This form of logic is based

less in certainty, and more on likelihood. Validity and truth are not deduced inexorably from the form of the argument and the veracity of the premises, rather an inductive argument is regarded as strong if the truth of the premises make it likely that the conclusion is also true—never certain, but likely. Inductive reasoning may take the form:

Almost all A are B
All B is C
So, A is C.

And an example might be:

Almost all children diagnosed with ADHD take Ritalin,
Joe has ADHD,
So, Joe takes Ritalin

This could be regarded as a relatively strong inductive argument, and therefore not fallacious. When flaws in reasoning occur in this type of logic, they are called *informal fallacies*. These include any number of errors, irrelevancies, inconsistencies and weaknesses that render the argument invalid. One form of this is:

A few A are B
All B is C
So, A is C.

And an example might be.

A few children have ADHD
Joe is a child,
So, Joe has ADHD.

As previously mentioned, this paper will address twelve different types of fallacious reasoning, employing examples from ADHD research. These types will include both deductive and inductive arguments, and yet the rest of the paper has not been broken down according to this neat bifurcation—unfortunately—as the field has always been regarded as considerably more complex than that.

A number of philosophers have attempted to create explanatory models for understanding and organising different types of fallacy. The first, and probably the most influential, belongs to Aristotle, although other noted thinkers have also sought to construct their own systems, each an attempt produce a definitive guide to the crucial intellectual task of spotting phoney arguments. These include works by Bacon (1620), Bentham (1824), and Mill (1843), to

mention but a few. Each of these could have provided the template for this article, however the structure chosen comes from a more modern, and somewhat more prosaic, source. In the book, *Fallacy: the counterfeit of argument*, Fearnside and Holther (1959: 3-4) outline an effective three-part typology which, due to its simplicity and accessibility, will be employed here. The classificatory heads are Material Fallacies, Psychological Fallacies, and Logical Fallacies, and the twelve specific fallacies addressed in this paper are evenly distributed between them, although not all are referred to directly in the above text, and come instead from a number of other sources. The three-part model simply provides the best vehicle for their effective analysis.

The authors explain the functioning of this typology by utilising the analogy of a manufacturing process, one comprised of raw materials, an operator, and a machine. If all three elements work as intended, the end product will be satisfactory (ie. a valid, sound and/or strong argument).

However, three kinds of things can go wrong. The materials can be below standard or poorly prepared. The operator can make a mistake—get sleepy or be distracted and turn the wrong knob. And the machine itself can break down or malfunction (*sic*). In any of these cases, the product probably will not pass inspection. If the trouble lies with the material, we call it *material*; if with the operator, we call it *psychological*; if with the machine, then *logical*. (Fearnside & Holther 1959: 4)

This is not an exact science. These classifications are meant solely to help with the process of understanding faulty argument, and they are neither definitive nor immutable. Indeed, several of the fallacies could be allocated to one of the other heads without stretching the logic of the system too much. That aside, I will take the three heads in turn:

A) Material Fallacies

An argument is a step up from a simple assertion, in that it purports to prove the claims made. The argument generally emerges as the end product of a couple of premises and a resulting conclusion. These premises should not magically appear out of the ether, but should rather be true—that is, factual—in that they are supported by appropriate evidence. After all, premises can mean no more than the evidence supporting them, since no more can come out of an argument than goes in at the beginning. The issue eventually comes down to the question of whether the evidence is accurately represented in the premises, and whether those premises are clear and intelligible. (Fearnside and Holther

1959: 9). In those arguments where this is not the case, material fallacies are likely to occur.

Of the four material fallacies discussed here—the Golden Mean fallacy, the False Cause fallacy, the Weak Analogy fallacy, and the False Dichotomy fallacy—not all are addressed by Fearnside and Holther (as previously mentioned), but each is particularly relevant to the kinds of faulty argument most frequently found in ADHD research and commentary.

1) Golden Mean Fallacy

Either A or B.
So $\frac{1}{2}$ A, $\frac{1}{2}$ B.

This fallacy is based upon the pre-existence of two contrary, or widely divergent, positions. Faced with the difficulty of choosing between those positions, a compromise solution is reached when both elements are incorporated into the conclusion. This argument is a fallacy since nothing in the premises provides any support for that conclusion.

It is estimated that 1 – 12% of school age children are affected by ADHD, with 3% the consensus estimate. (Woodrich 1994: 13)

Descriptions of the prevalence of ADHD almost always begin with an account of the broadest range of estimates, from the lowest to the highest, often up to fifteen percent apart. A mid-range figure is then inevitably suggested as the truth, which then seems like a reasonable compromise. I am frequently faced with variants of this argument in student assignments, ie. ‘Some writers reject ADHD altogether, many others point to a massive over-diagnosis of the disorder, so the truth probably lies somewhere between the two’. This appears to be a perfectly logical settlement of the issue, especially to education students writing for a lecturer who appears to regard ADHD as an artefact of governance, and library shelves full of books teaching them how to identify, manage, and teach the thousands of ‘sick’ children waiting for them in classrooms. Unfortunately, academic truth is not (or should not be) organised according to political compromise, and wishing something to be so provides a poor foundation for an argument. Furthermore, this is not really even a compromise, since ADHD sceptics would be forced to concede the existence of the disorder, while advocates would merely need to trim their projections somewhat.

2) False Cause Fallacy (Post Hoc)

A then B
So, A caused B

This is also widely known as ‘Post hoc, ergo propter hoc’ (after this, therefore because of this). There is the temptation to assume that simply because one event follows another, that they are somehow causally linked. This is a frequent mistake, and forms the basis for one of the most common of all fallacies. Of course, there can be a causal relationship between different events, however the existence of this relationship requires supporting evidence, not simply the weight of implication gained by placing them together in the same sentence.

We know some of them by labels such as ‘defendant’, ‘probationer’, ‘parolee’, or ‘inmate’—people who end up in our country’s criminal justice system with a highly treatable but often overlooked disability: Attention Deficit Hyperactivity Disorder (ADHD). In fact, an astonishing 30 to 70 percent of inmates may have ADHD. (Hurley & Eme 2004: i)

The implication here is fairly clear:

Joe has ADHD, then Joe goes to Jail,
So, Joe’s ADHD caused Joe to go to Jail.

Most sociologists and criminologists would argue that incarceration is the end result of a complex mosaic of social forces—gender, social class, age, ethnicity, location, family history, local cultural customs and expectations, policing practices—all of which contribute to this outcome. This is a common form of logic within ADHD commentary: ie. ADHD is the root cause of so much harm ... had we but known ... it all makes sense now.

Problems with causality in this area also frequently takes the form: ‘classrooms were in chaos, we discovered ADHD (read: Ritalin): things are better’. All the elements of this statement, not only those relating to causality, but also to validity, factuality and morality, are questionable.

3) Weak Analogy Fallacy

A is the same as B – for property 1
A is the same as B – for property 2
So, A must be the same as B for property 3.

An analogy is the claim that if two ideas, things, or circumstances are alike in a number of ways, then they will be alike in some further way—a way that normally suits the purposes of the proposition. A strong analogy exists where the two elements are sufficiently similar in relevant respects, and a weak analogy is made when they are not. For example, the statement: ‘The Beatles are just like Mozart’ is analogy probably structured according to the following class characteristics:

The Beatles are the same as Mozart – both made music
The Beatles are the same as Mozart – both were very successful
So, The Beatles are the same as Mozart – in that Mozart is still regarded as great centuries later, so will be the Beatles.

Arguably, this is a strong analogy if you like the Beatles and/or come from Liverpool, and a weak analogy if you do not (or do not like Mozart).

ADHD is frequently explained through the use of analogy. In fact, it is an exceptionally fertile field for imaginative comparisons: a spinning top, a leaky canoe, a conductor-less orchestra, a badly-manufactured car, a radio with static, a smoke-filled burning house ... and all from just one source (Hurley & Eme 2004). However, the analogy with objective physical disease is by far the most common.

Parents and teachers tend to think that there is nothing wrong with the child and that all he needs is a good whack. Well, no matter how much you whack him, he is not going to get better. The analogy is someone with diabetes. If you whack him, is his diabetes going to get better? There is a biological cause for ADHD. (Yong Tiam Ku 2006: 3)

The logic here is straightforward:

ADHD is like Diabetes – both are undesirable
ADHD is like Diabetes – both are abnormal states of health
So, ADHD is like Diabetes – in that Diabetes is an objective, uncontested, observable fact of nature, deserving of no moral condemnation, so is ADHD.

ADHD is often compared to a wide range of common, unproblematic illnesses and diseases, everything from pneumonia to mumps. However, this is ultimately a weak analogy which attempts to mask a significant problem with the psychological construct of ADHD, in that there appears to be no objective physical evidence for its existence at all—

‘no physical symptoms, no neurological signs, and no blood tests’ (Breggin 1998: 141-142).

4) False Dichotomy Fallacy

Either A or B,
Clearly not A,
So, B

A dichotomy is simply a choice between two alternatives. This common situation becomes a fallacy under two particular circumstances. The first is where the choice is largely rhetorical: ‘Either we attempt to escape, or we are executed in the morning’. Not much of a dilemma really. The second circumstance is where there are actually a number of other choices which have been left out of the equation. In most cases, the false dichotomy fallacy involves both, that is, a simplification of the field into two choices, and the presentation of one of those choices as completely undesirable.

Ask the medical expert: Larry Silver, M.D.

The Consequences of Untreated ADHD

Q: ‘I have a 22-year-old son who was diagnosed with ADHD when he was 8. We did not have him put on Ritalin. Now he is self-medicating and in trouble. What can I do?’

A: Sadly, your son illustrates what may happen when someone has a neurologically based disorder (ADHD) and is not treated. I do not know why he was not put on medication ... (Silver 2008, ADDitude website)

This logic is particularly common within ADHD commentary, particularly, it seems, from doctors. What can be a very complex problem is distilled down to two simple alternatives ie. take Ritalin, or become a drug-taking criminal. Clearly, as one of these options is spectacularly undesirable, the taking of Ritalin is not only logical, it is all-but necessary. This argument can be seen across a range of different contexts, but always with the same fallacy firmly in place: it’s either Ritalin or a chaotic classroom, Ritalin or a dysfunctional family.

This is not a real dilemma. The alternative is so disagreeable as to be redundant, and it also neglects all the other options available to the good teacher or the good parent, options which remain viable for addressing specific kinds of unwanted behaviour. This is the case whether ADHD is accepted as a valid disorder or not.

B) Psychological Fallacies

Here is another trick which, as soon as it is practicable, makes all others unnecessary. Instead of working on your opponent's intellect by argument, work on his will by motive, and he, and also the audience if they have similar interests, will at once be won over by your opinion, even though you got it out of a lunatic asylum. (Schopenhauer 1896: XXXV)

It would be tempting to think that this type of fallacy has a significantly lesser role to play within scholastic writing than it does on Fox News, and to some extent, this is true. Certainly, familiar illegitimate strategies of argument, such as those based around ridicule, or simply shouting the loudest, generally do have limited currency within academic discourse (except at conferences). However, there is a wide variety of other fallacies which can be found within more serious writing that have the same effect. These fallacies play up the rhetorical elements of an argument, employing anything from distraction and obfuscation, to emotional leverage and appeals to populism.

The four fallacies outlined here—the Ad-Populum fallacy, the Ad-Hominem fallacy, the Red Herring fallacy, and the Straw Man fallacy—are all exceptionally common flaws in argument. Once again, ADHD commentary and research has proved to be an exceptionally fertile source of examples.

5) Ad-Populum Fallacy

A believes X
B believes X
So, C ought to believe X

An argument is fallacious if the basis for its validity rests solely on the fact that, since some other people regard something to be true, then so should you. Truth is not simply a popularity poll. At some point, some kind of assessment of evidence is required in order to weigh up the validity of the argument. Weight of numbers, in the absence of satisfactory supporting evidence, is no argument at all.

Of course, it has been suggested, and probably fairly convincingly, that scientific knowledge *is* actually a numbers game, and that the position which can muster the greatest quantity of powerful supporters is likely to be regarded as the truth—leaving aside, for the purposes of this paper, more complex debates about power/knowledge (Foucault 1977), correspondence theories of truth (Russell 1912), and/or falsifiability

(Popper 1963). However, such scientific positions still require persuasive evidence to achieve, and maintain, intellectual ascendancy.

In Australia the use of medication approaches 1 per 100 school children and in North America is even as high as 3-5 per 100. It would therefore appear that, in the UK, very few children are being effectively managed medically at the moment, for what is essentially a medical condition. (Kewley 1999: 27)

This is not an analysis of available evidence, instead the above quotation can simply be paraphrased as: Australians believe in ADHD, Americans believe in ADHD, therefore those in the UK ought to believe in ADHD. This, in and of itself, is not a valid argument, but it is very common within ADHD commentary. Interestingly, given medication rates, the argument could equally have been: Germans do not believe in ADHD, the French do not believe in ADHD, therefore clearly those in the UK currently believe in ADHD too much.

6) Ad Hominem Fallacy

A believes X,
B believes Y,
A is an idiot,
So, Y is true.

The truth or falsity of any given argument does not hinge upon who makes that argument. When assessing whether deductive or inductive argument is valid, sound, or strong, no account should be taken of whether that person has appalling politics, or isn't very clever, or doesn't wash, and then a decision made that, actually, the conclusion is not supported by those premises after all. However, this fallacy is probably the most familiar, frequently used, and effective of all.

Ad Hominem fallacies come in a number of forms, from the basic: 'Your argument is false, because you an idiot/bad', through the 'tu quoque' fallacy: 'Your argument is false, because arguing that position makes you a hypocrite', to the 'damning the origin' fallacy: 'Your argument is false, because you have a vested interest in a certain conclusion'. The quote below is probably a combination of the first and the last.

The body of evidence is now so great that no reputable research centre questions the benefit and safety of this treatment in ADHD. We realise there are still antidrug activists who claim medication is unhelpful and dangerous. As educated adults we recognise the world is full of influential people who mislead through deliberate intent or through ignorance. (Green & Chee 1997: 124)

To paraphrase: those who question the use of Ritalin are disreputable, misleading, and/or idiots. There is a strong theme through many of the medical responses to criticisms of pharmacological interventions into ADHD that only doctors have the right to participate in the debate. In response to one journal article I had written on ADHD, I received a letter from a very unhappy child psychologist, asking me precisely what my qualifications were in psychology, and if I had none, to be quiet. This is a variant on an Ad-Hominem fallacy.

Of course, the source of any information should always be taken into account when assessing the soundness of an argument—that is, whether the premises are likely to be true, or what information may have been selected for presentation. For instance, I have no interest in listening to arguments, or reviewing evidence, from members of the British Movement concerning their views on the holocaust.

7) Red Herring Fallacy

Discussion about A,
Irrelevancy B introduced, under pretext of significance,
So, Discussion no longer about A.

When an argument is not going well, a common strategy is to try and subtly change the direction of the debate by introducing a topic which appears to be relevant to the initial subject, but is actually irrelevant to any of the previously addressed premises or conclusions. This is a fallacy since, while it appears to be connected to the topic under discussion, it is simply a psychological device to deflect attention from an otherwise weak position.

Judge Paul Conlon said attention deficit hyperactivity disorder (ADHD) was the most over-diagnosed condition in the community with ‘naughty kids whacked’ on to drugs like the stimulant Ritalin, News Limited newspapers have reported. But Australian Medical Association (AMA) vice-president Dr Choong-Siew Yong said ... ‘untreated severe ADHD has consequences such as juvenile crime, failure at school, social breakdown and family breakdown,’ he told Sky News. ‘So the consequences of not treating severe ADHD are actually much more severe than using medication.’ (The Age 2007, 8)

While not defending the judge’s somewhat overstated assertion in this example, the doctor responds with a classic red-herring. The issue raised by the judge is whether Ritalin has some unwanted physical side-effects, but the doctor attempts to rebut this claim by talking about the disciplinary consequences of not providing the drug: ie. rampant social disorder. An identical argument is often used within education when concerns are raised

about the dangers of prescribing stimulants to children: ie. what about the teachers, and the maintenance of an orderly classroom?

8) Straw Man Fallacy

A is a sub-set of X,
A is a weak argument, and demonstrably false,
So, X is false.

In theoretical terms, a basic argument is organised around two premises and a conclusion. However, in more practical terms, a debate between two contrary positions usually involves a dialogue of successive arguments, each attempting to rebut the other. Our adversarial legal system is built upon this process, where a good barrister attempts to anticipate opposing counsel's arguments in advance, and defuse them during their own presentations. By presenting a weak caricature of part of an opponent's position, the entire broader argument can often be discredited. This is a Straw Man fallacy.

The greatest assault on stimulants was made in the late 1980s from an unexpected source, the Church of Scientology ... This unexpected assault from a religious sub-group set back appropriate treatment of ADHD by years ... Parents must still be on their guard as even today press releases and 'letters to the editor' continue to come from Scientology with antimedication attitudes. (Green & Chee 1997: 12-13).

The thrust of this quotation is that the primary criticism of pharmacological intervention into ADHD comes from the Scientologists—a rather obscure, and slightly cultish, religious sect. Since this grouping also believes in space aliens, positing them as the vanguard of the anti-Ritalin brigade has the deliberate effect of drastically reducing the effectiveness of the opposition's argument. Indeed, the exceptionally dubious status of Scientology means that this argument shares some characteristics with an Ad-Hominem fallacy.

Most academics would recognise the Straw Man fallacy. Many of us would have felt the temptation to criticise relatively weak versions of positions we disagree with, rather than attack, head on, the sharpest end of the opposition. Likewise, many of us would have hardly recognised feeble versions of our own theoretical allegiances (or indeed, our own work) kicked around in print by opponents, and from there, seen the entire position triumphantly damned.

C) Logical Fallacies

Continuing the metaphor of the manufacturing process, the final remaining flaw in argument relates neither to the substance under manufacture, nor the errors of the machinist, but rather to the functioning of the machine itself. That is, at this point of the process the concern is not upon the truth of the premises, per se, or the trick and errors of the arguer, but upon the structure of the argument.

In this sense the process of searching for logical fallacies is almost mathematical in its operation, and focuses mostly upon the twin issues of validity—already discussed earlier in this paper—and logical truth. Logical truth differs from empirical truth in that information external to the matter at hand is not required in order to make an evaluation. For example, the statement ‘My dog has three legs’ requires an empirical assessment of the said canine order to determine its truth, whereas the statement ‘My dog is not my dog’ requires no such assessment, as it is logically false. After all, $a \neq \text{not } a$.

The four fallacies outlined here—Affirming the Consequent fallacy, the Begging the Question fallacy, the Suppressed Quantification fallacy, the Non-Sequitur fallacy—are all regularly employed within ADHD commentary and research. Indeed, it has been contended that one particular example of the Begging the Question fallacy constitutes the logical foundation of the entire disorder.

9) Affirming the Consequent Fallacy

If A then B
B
So, A

One of the most common form of arguments is the ‘*if, then*’ construction. ‘*If* I run out of petrol, *then* the car will stop’. Therefore, following this logic, since I have run out of petrol, the car has stopped. A logical error occurs when the reverse assumption is made: if the second part of the construction is true (ie. affirming the consequent), then this proves the antecedent. ‘*If* the car has stopped, *then* I have run out of petrol’. This may well still be true, but it is not *necessarily* true. The car may have stopped because I put my foot on the brake, or because it stalled, or because I drove it into a wall.

Q: My 10 year old and I have ADHD, is my hyperactive 4 year old too young to diagnose?

A: Absolutely not! Your 4 year old has a VERY good chance of having ADHD and is not too young to diagnose or treat. (YouQA: 2008)

There are a number of logical problems here, indeed this could also come under the umbrella of a Hasty Generalisation fallacy, as well as Affirming the Consequent. Putting aside the somewhat dubious status of ADHD, it is not only bad logic, but also bad medicine/psychology, to extrapolate one symptom backwards to diagnose a disease. However, the main issue here is the logic that as A and B have ADHD, and are therefore hyperactive: C is hyperactive, so C must have ADHD—ie. affirming the consequent..

The Affirming the Consequent fallacy involving the ADHD-hyperactivity nexus has become one of the signal faulty assumptions of the modern classroom. Children who show excessive signs of life in the classroom seem to be quickly pigeon-holed into the ADHD basket. Other options, both in terms of explanations for their conduct and strategies for dealing with the ensuing disruption, become subordinate to the all-encompassing ADHD/Ritalin duopoly.

10) Begging the Question Fallacy (circular reasoning)

Why A?
Because of B,
Why B?
Because of A

In constructing a valid argument, involving the familiar components of premises and a conclusion, the premises must be independent of the conclusion. That is, a conclusion cannot be regarded as valid if it is reached by the use of premises which have already assumed the truth of that conclusion, the very issue the argument was set up to determine. To put it another way, begging the question largely consists of an attempt to support an assertion by simply repeating that assertion in a different way. In the argument: ‘Astrology is true’—‘How can you be sure?’—‘Because I’m a cancer, and we are perceptive about these things’, the conclusion is simply a more complex version of the initial premise, ie. astrology is true, because astrology is true.

How do you know a child has Attention Deficit Disorder (ADHD)? Because he’s impulsive and out of his seat. Why is he impulsive and out of his seat? Because he has ADHD. (Weist et al. 1999: 121)

This is the classic example of circular reasoning, in that the argument refers to nothing outside of itself. This should not be surprising, as in spite of all the research conducted into ADHD over the last twenty years, there still appears to be no concrete, objective evidence of an identifiable physical condition (Jacobs, 2002). With nothing for ADHD to

be actually tied to, all that remains are observations about behaviour, which then act as both an indicator of, and the defining criteria for, that initial disorder.

11) Suppressed Quantification Fallacy

Some A is B,
The 'some' is omitted,
A is B
So, All A is B.

Logical constructions often use the quantifier 'some', as in 'some A is B'. This covers all the ground between 'no A is B', to 'all A is B'. In this instance, 'some' can cover anything from 'a few', to 'several', 'a number of', 'many', or 'most'. However, if this quantifier is removed, all that remains is 'A is B', which can be more accurately written as 'All A is B'. Such fallacies succeed in erroneously turning the uncertain, into the undisputed.

Top 10 Questions about ADHD Drugs ... Answered!

1. How can I tell if my child really needs ADD drugs?

Experts agree that medication should be considered for any child whose symptoms of attention deficit disorder (ADD, ADHD) interfere with his social, emotional, or academic life. (McCarthy 2007: 1)

Experts Agree: ADHD is a Valid Disorder.

A remarkable international consensus confirms that ADHD is a real and valid disorder. (Hurley & Eme 2004, 2)

Which experts? How many ... a couple? Quite a lot? These questions become redundant with the argument constructed as it is, since the implication immediately become that all experts think Ritalin is the way to go for ADHD, or that all experts regard ADHD as ontologically valid. Although both these claims are very far from the truth, it is a common way of (mis)representing the information. Dissenting voices are magically erased from the debate, or immediately reclassified as 'non-expert'.

12) Non-Sequitur Fallacy

All A is B
All B is C
So, D

In many ways, the term 'non-sequitur' (does not follow) is a catch-all phrase which can cover most fallacies of argument. If the conclusion to an argument is not a valid

conclusion—that is, it is not a logical consequence of the premises—then it ‘does not follow.’ It is a non-sequitur. More specifically, however, this term is usually applied to a conclusion that is largely unconnected to what went before it. This conclusion may well be part of the same generalised discussion, but nothing in the preceding statements can be considered to provide satisfactory supporting evidence for it.

... given Ritalin’s quick action (it can ‘calm’ children within days after treatment starts), some doctors even rely on the drug as a diagnostic tool, interpreting improvements in behaviour or attention as proof of an underlying ADHD. (Bromfield 1996: 24)

This is a surprisingly common argument: Ritalin helps with hyperactivity, hyperactivity is a symptom of ADHD, therefore ADHD is a valid disorder. This conclusion is not related to the two premises. The fact that Ritalin acts to calm some forms of hyperactivity, does not mean that ADHD is somehow magically confirmed as an independent disease entity. No-one is disputing that some individuals are more ‘hyper-kinetic’ than others, or that amphetamines, for all the problems associated with their provision, do ameliorate some aspects of this hyper-kinesis, however neither of these conclusions logically lead to the conclusion that ADHD exists.

Conclusion

The central aims of this paper have been twofold: first, to restate the importance of the ability to spot phoney arguments when we are confronted with them. Twelve fallacies have been addressed here—categorised variously as material, psychological and logical—but there are also dozens of others, most clearly discussed in any good book on logic. These include fallacies such as Hasty Generalisation, False Conversion of Propositions, Amphibole, The Gambler’s Mistake, and No True Scotsman, to name but a few. These are equally important, in a general sense, although perhaps not as applicable to the issue of ADHD.

The second aim has been to demonstrate the frailty of many of the arguments used to support ADHD. Some are of only passing importance, but arguably others go to the very core of the disorder. There is the contemporary assumption that very active children simply must have ADHD (Affirming the Consequent), there is the proof of the existence of ADHD by the fact that Ritalin clearly deals with its symptoms (Non-Sequitur), and

most importantly, there are the symptoms of ADHD which both explain the disorder, and are explained by it (Begging the Question).

It should be pointed out that ADHD is by no means the only behaviour disorder vulnerable to this kind of criticism, far from it. It is, however, by far the most diagnosed and well-known of them all. Virtually any of a hundred other contemporary disorders—Borderline Personality Disorder, Oppositional Defiance Disorder, Conduct Disorder, Antisocial Personality Disorder, Intermittent Explosive Disorder—are equally questionable in their use of logic. As I have argued extensively elsewhere, this tidal wave of modern behaviour disorders has much more to do with the pathologisation of conduct, and the governance of populations, than it has with any ontological validity.

Finally, and to reiterate a point made at the beginning of this paper, my own record for producing fallacy-free argument is far from impeccable. A brief review of my own work over the years has produced several wobbly constructions, most notably some Hasty Generalisations, a couple of Red Herrings and the occasional Straw Man, so I am more than aware how easy it is to make these kinds of logical errors. Moreover, advocates of ADHD might argue that this entire paper has an element of the Straw Man fallacy about it, in that I have not necessarily chosen the most sophisticated of commentary to make my case, as anticipated in the observations on fallacy No. 8. While this latter observation might have an element of truth about it, it is ultimately irrelevant, as the examples I have chosen accurately illustrate the dominant arguments employed when discussing the disorder. Not only are they regularly used within the academy, they are also the most common discourses employed at the twin coalfaces of the classroom and the living room—and more often than not, they are fallacious. Hopefully, pointing this out will give those who employ this category, either in their professional or family life, pause for thought.

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